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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/873,057	06/02/2001	Kambiz Hayat-Dawoodi	TI-29619	4012

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Gary C. Honeycutt  
Texas Instruments Incorporated  
P.O. Box 655474, MS 3999  
Dallas, TX 75265

EXAMINER

KOBERT, RUSSELL MARC

ART UNIT	PAPER NUMBER
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2829

DATE MAILED: 07/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Applicati n No.

09/873,057

Applicant(s)

HAYAT-DAWOODI, KAMBIZ

Examiner

Russell M Kobert

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 May 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 6 and 10-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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1. Applicant's election of Invention I, Species 1, claims 1-5 and 7-9, in Paper No. 6 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

2. Claims 6 and 10-21 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Invention and/or Species, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 6.

3. Claims 1-5 and 7-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicant claims a slit or plurality of slits wide enough to interrupt electron flow but not wide enough to significantly reduce thermal conduction in a leadframe structure. It is not apparent what width the slits would be required to fall between to meet the criteria noted supra. This feature is not considered to further limit the structure of claims 1 and 8.

As to claim 7, it is not clear if the apparatus is the leadframe or the combination of a leadframe and a semiconductor chip having a Hall device. According to claim 1 it is apparent that the invention as claimed is limited to a leadframe. In as much as that is concerned, having an integrated circuit within the chip further including a Hall device is not considered to further limit the apparatus as described in claim 1.

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4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 5, 8 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Manabe (4797726).

Manabe anticipates a metallic leadframe structure (Figures 3 or 6) for use with a semiconductor chip (see Abstract) intended for operation in a changing magnetic field, comprising: a chip mount pad (combination of 6, 7, 8 and 9 in Figure 3; col 2, ln 48-50) having at least one slit (referred to as gaps; see col 2, ln 40-44) penetrating the whole thickness of said pad and substantially traversing the area of said pad from one edge to the opposite edge (clearly shown in Figure 3 as area between 10 and 12 for one slit and 11 and 13 for a second slit not including planes 10, 11, 12 and 13); and said slit wide enough to interrupt electron flow in the pad plane, but not wide enough to significantly reduce thermal conduction in a direction normal to said pad plane, whereby said slit is operable to disrupt eddy currents induced in said pad by said changing magnetic field; as recited in claim 1.

As to claim 5, having a pad with an area larger than the chip intended for mounting is anticipated by Manabe (col 3, ln 1-11).

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Manabe anticipates a metallic leadframe structure (Figure 6) for use with a semiconductor chip (see Abstract) intended for operation in a changing magnetic field, comprising: a chip mount pad (14-21) having a plurality of slits (the area bounded by plates 22 through 29; see also col 3, ln 48-66) in a configuration operable to suppress eddy currents induced in said pad by said changing magnetic field; each of said slits wide enough to interrupt electron flow in the pad plane, but not wide enough to significantly reduce thermal conduction in a direction normal to said pad plane; as recited in claim 8.

As to claim 9, having the plurality slits configured approximately parallel or approximately star-burst-like (as shown in figure 6), or in any pattern suitable for suppressing the origin of eddy currents, while preserving the mechanical stability and thermal conduction of said leadframe is anticipated by Manabe.

As to claim 7, having an integrated circuit within the chip further including a Hall device is not considered to further limit the apparatus described in claim 1.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Manabe (4797726).

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided a slit having a width from about 0.01 to 0.5 mm as described in claim 2 or a structure comprising a sheet-like starting configuration having a thickness in the range from about 100 to 300  $\mu\text{m}$  as described in claim 3 because these claims demonstrate limiting conditions which can be determined by routine experimentation and are considered to be within the scope of the invention as disclosed in Manabe et al.

Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. In re Swain et al., 33 C.C.P.A. (Patents) 1250, 156 F. 2d 239, 70 USPQ 412 ; Minnesota Mining and Mfg. Co. v. Coe, 69 App. D.C. 217, 99 F. 2d 986, 38 USPQ 213 ; Allen et al. v. Coe, 77 App. D. C. 324, 135 F. 2d 11, 57 USPQ 136 .

8. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Manabe (4797726) as applied to claims 1 and 3 above, and further in view of Brown (4918511).

Brown shows a leadframe wherein said sheet-like starting configuration is selected from a group of metals consisting of copper, copper alloy, brass, aluminum, iron-nickel alloy, and invar (col 1, ln 25-27) as mentioned in claim 4.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have applied the teaching of Brown to that of Manabe to make the claimed invention because Manabe teaches (col 1, ln 13-17) that leadframes are made of metal and Brown teaches (col 4, ln 14-18) that a leadframe may be constructed of a metal chosen for its electrical conductivity and heat dissipation. Moreover, Brown goes on to state that having portions of the lead frame removed (col 2, ln 6-11) provide

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improved electrical and heat transfer characteristics to the leadframe as is the same useful technique described in Manabe.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Takahashi et al (5021865), Kobayashi (5175610) and Kata et al (5757068) show variations of leadframes having slits or openings for improved thermal expansion and contraction characteristics.

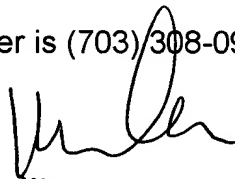
10. A shortened statutory period for response to this action is set to expire three month(s) from the date of this letter. Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Russell Kobert whose telephone number is (703) 308-5222.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0956.



Russell M. Kobert  
Patent Examiner  
Group Art Unit 2829  
June 17, 2003



KAMAND CUNEO  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2000